

L 5299-66 EWT(m)/T

ACC NR: AP5024963

SOURCE CODE: UR/0286/65/000/016/0024/0024

AUTHORS: Melkonyan, G. S.; Lileyev, I. S.; Darbinyan, M. V.; Arakelyan, O. I.;
Dovlatyan, A. N.; Oganesyan, M. L.; Tokmadzhyan, G. S.

ORG: none

TITLE: A method for obtaining zeolites. Class 12, No. 173720 (announced by
Scientific Research Institute of Stone and Silicates (Nauchno-issledovatel'skiy
institut kamnya i silikatov))

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 24

TOPIC TAGS: zeolite, perlite, volcanic glass

ABSTRACT: This Author Certificate presents a method for obtaining zeolites from natural minerals by treating the latter with a base at a temperature of 50-200°C. The resulting zeolite is then strained and washed. To increase the amount of available raw materials and to lower the cost of zeolites, perlite rock is used as the original raw material.

SUB CODE: MT, GC / SUBM DATE: 12May64 / ORIG REF: 000 / OTH REF: 000

Card 1/1

UDC: 661.183.6

09010539

MAL'TSEV, V.S.; ARAKELYAN, O.I.; PONOMAREV, V.D.; PANYUSHKIN, V.T.; ISABAYEV,
S.M.

Formation of β -Al₂O₃ in the process of carbothermal reduction
of sodium aluminate. Izv. AN Kazakh SSR Ser. khim. nauk 15
no.3:46-54 Jl-Ag '65.

1. Submitted December 21, 1964.

(MIRA 18:11)

L 34095-66 EWP(e)/EWT(m)/TEWP(t)/ETI IJP(c) JD/JG/AT/WH/JH
ACC NR: AP6008802 SOURCE CODE: UR/0360/65/000/003/0046/0054

AUTHOR: Mal'tsev, V. S.; Arakelyan, O. I.; Ponomarev, V. D.; Panyushkin, V. T.; Isabayev, S. M.

ORG: none

TITLE: Formation of beta-Al₂O₃ during carbothermic reduction of sodium aluminate

SOURCE: AN KazSSR. Izvestiya. Seriya khimicheskikh nauk, no. 3, 1965, 46-54

TOPIC TAGS: alumina, aluminate, carbon, chemical reduction

ABSTRACT: The composition of the phases formed during the vacuum carbothermic reduction of sodium aluminate and the conditions of formation of β -alumina in the products of this reduction were studied. The reaction products were analyzed by chemical and petrographic methods, and in some cases by x-ray structural analysis. The following optimum conditions of the reduction were found: a reaction temperature of 1200°C, holding for 2 hr at this temperature, residual pressure of 0.4 – 1.0 mm Hg, excess of reductant (carbon) up to 75% of stoichiometry according to the reaction $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 + \text{C} \rightarrow 2\text{Na} + \text{Al}_2\text{O}_3 + \text{CO}$. Practically pure alumina with a small admixture of sodium oxide (up to

Card 1/2

ABRAMYAN, M.S.; ARAKELYAN, R.A.

The Ntroeungtian stage in the Armenian S.S.R. Izv.AN Arm.SSR.Ser.
FMET 1 no.5:419-422 '48. (MLRA 9:8)

1. Institut geologicheskikh nauk Akademii nauk Armyanskoy SSR.
(Armenia--Paleontology, Stratigraphic)

Arakelyan, R. A.

✓ New data about the origin and age of mineralization of the Kafansk field deposits. R. A. Arakelyan and G. O. Pidgryazov. Doklady Akad. Nauk Armenia S.S.R. 22, 29-34 (1950) (in Russian, Armenian summary).—The geol., mineralogical, and chem. study showed the age of the Kafansk field (I) to be of pre-upper Jurassic period. Pyrite, chalcopyrite, sphalerite, and galena are predominant with some bornite, thenardite, and enargite; typical elements of the acid magma, such as Sb, W, and Mo, as well as those of the primary magma, such as Ni, Co, and Pt, are absent.

Elizabeth Barabash

2

PM

ARAKELYAN, R.A.

~~Stratigraphy of the ancient metamorphic complex in Armenia.~~
Izv. AN-Arm. SSR. Ser. geol. i geog. nauk 10 no. 5/6 :3-16 '57.

(MIRA 11:8)

1. Institut geologicheskikh nauk AN ArmSSR.
(Armenia--Rocks, Crystalline and metamorphic)

ARAKELYAN, R.A.; PIDZHYAN, G.O.

Concerning E.G. Malkhasian's, IU.A. Leie's, and S.S. Vaniushin's
works on the Kafan ore deposit. Izv. AN Arm. SSR. geol. i geog.
nauk 11 no.2:87-92 '58. (MIRA 11:9)

1. Institut geologicheskikh nauk AN ArmSSR.
(Kafan District--Ore deposits)

PAPFENGOL'TS, Konstantin Nikolayevich. Prinimali uchastiya: GAMKRELIDZE,
P.D.; YEFREMOVA, G.M.; MIKLUKHO-MAKLAY, K.V.; RODZYANKO, G.N.;
SAFRONOVA, I.N.; ARAKELYAN, R.A., otv.red.; SHTIBEN, R.A.,
red.izd-va; MINASYAN, M.A., tekhn.red.

[Outline geology of the Caucasus] Geologicheskii ocherk Kavkaza.
Sost. P.D.Gamkrelidze i dr. Erevan, Izd-vo Akad.nauk Armeniani
SSR, 1959. 505 p. (MIRA 12:8)
(Caucasus--Geology)

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

ARAKELIAN, R.I.

History of the Lower Paleozoic magmatic activity in Armenia.
Zap.Arm. etd. Vses. min. ob-va no.1:21-26 1959. (VIRA 14:10)
(Armenia--Geology, Structural)

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

S/171/60/013/004/001/004
E142/E265

AUTHORS: Aykazyan, E. A. and Arakelyan, R. A.

TITLE: Electrode Processes in Acetonitrile. Part 1:
Anodic Separation of Chlorine on Platinum in
Acetonitrile Solutions of Hydrogen Chloride

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR, Khimicheskie
nauki, 1960, Vol. 13, No. 4, pp. 225-234

TEXT: Acetonitrile can be used as solvent in organic
electro-chemistry as it has a comparatively high dielectric
constant (38.8 at 20°C), low viscosity and is of liquid consist-
ency between -40°C and 82°C. Various investigators used aceton-
itrile as a solvent when testing the electric conductivity of
different substances (Ref. 4). S. Wawzonek and M. E. Runner
(Ref. 5) used acetonitrile during polarographic experiments with
various salts. Other investigations, where the compound was
used as solvent, are reviewed briefly (Refs. 6-10). In the
present investigation the acetonitrile was purified and dried
(moisture content not more than 0.01%). The preparation of the
various salts (sodium perchlorate, tetraethylammonium perchlorate
/sic/, tetraethylammonium fluoride and lithium chloride) is

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S/171/60/013/004/001/004
E142/E265

Electrode Processes in Acetonitrile. Part 1: Anodic Separation of Chlorine on Platinum in Acetonitrile Solutions of Hydrogen Chloride

outlined. The polarographic curves were obtained by the method described by A. I. Frumkin (Ref. 15). A microammeter, a micro-voltmeter and a semi-automatic potentiometer were used in the experiments, which were conducted at a temperature of $20 \pm 1^\circ\text{C}$. The characteristic forms of the polarisation curves in the above mentioned salts (Figs. 1-5) are discussed; they agree with data quoted by G. J. Janz and S. S. Danyluk (Ref. 11) who stated that hydrogen chloride, dissolved in acetonitrile, behaves as a weak electrolyte. Marked passivation of the Pt-electrode occurs at 1.8 to 2.3 V potentials which indicates that at these values processes may take place which lead to the oxidation of the platinum surface. Acetonitrile, unlike water, is inert to electrochemical oxidation and reduction. The compound cannot be used for the preparation of electrolytic oxygen. The unstable compound Cl_2O_8 is formed from chlorine tetroxide, the former decomposing

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S/171/60/013/004/001/004
E142/E265

Electrode Processes in Acetonitrile. Part 1: Anodic Separation of Chlorine on Platinum in Acetonitrile Solutions of Hydrogen Chloride

on the electrode surface into oxygen and lower, more stable oxides of chlorine. There are 5 figures and 22 references; 8 Soviet and 14 non-Soviet.

ASSOCIATION: Institut organicheskoy khimii AN ArmSSR
(Institute for Organic Chemistry, AS ArmSSR)

SUBMITTED: April 22, 1960

Card 3/3

MKRTCHYAN, S.S., akademik, glav. red.; VARDANYANTS, L.A., red.;
GABRIELYAN, A.A., red.; MAGAK'YAN, I.G., akademik, red.;
PAFFENGOL'TS, K.N., akademik, red.; AZARYAN, N.R., kand.
geol.-miner. nauk, red.; AKOPYAN, V.T., kand. geol.-miner.
nauk, red.; !RAKELYAN, R.A., kand. geol.-miner. nauk, red.;
MESROPYAN, A.T., kand. geol.-min. nauk, red.[deceased]

[Geology of the Armenian S.S.R.] Geologiya Armianskoi SSR.
Izd-vo AN Arm.SSR. Vol. 2. [Stratigraphy] Stratigrafiia.
1964. 432 p. (MIRA 17:7)

1. Akademiya nauk Armyanskoy SSR, Erivan. Institut geologi-
cheskikh nauk. 2. AN Armyanskoy SSR (for Mkrtchyan, Magak'yan,
Paffengol'ts). 3. Chlen-korrespondent AN Armyanskoy SSR (for
Vardanyants, Gabrielyan).

TEDORADZE, G.A.; ARAKELYAN, R.A.

Adsorbed quantities of organic substances calculated from the measurements of mercury electrode impedance. Dokl. AN SSSR 156 no. 5:1170-1173 Je '64. (MIRA 17:6)

1. Institut elektrokhimii AN SSSR. Predstavлено академиком А.Н. Фрумкиным.

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

YERMILOVA, G.A.; ARAKELYAN, R.A.

Properties of polypropylene films. Plast, massy no.2:48-50
'64.
(MIRA 17:8)

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

ARAKELYAN, R.A.; VEGUNI, A.T.; BAL'YAN, S.P.; SAYADYAN, Yu.V.;
ASRATYAN, V.P.; BAGDASARYAN, G.P.; MALKHASIAN, E.G.;
ARUTYUNYAN, A.R.; ARUTCHYAN, A.G., red.; ASLANYAN, A.I., red.;
GOGINYAN, V.Y., red.; GULYAN, E.Kh., red.; KAZARYAN, S.V., red.;
MKRTCHYAN, K.A., red.; TSAMERYAN, P.P., red.

[Study of the geology of the U.S.S.R.] Geologicheskia izuchenost' SSSR. Erevan, Izd-vo AN Arm. SSR Vol.48. No.1.
1964. 157 p. (MIRA 18:6)

L (0839-67) EWT(m)/T/EWP(j) IJF(c) NM/RM
ACC. NR. AP6027764 (A) SOURCE CODE: UR/0180/66/008/008/1321/1325

AUTHOR: Durgaryan, A. A.; Arakelyan, R. A.

35
B

ORG: Yerevan State University (Yerevanskiy gosudarstvenny universitet)

TITLE: Copolymerization of ethylene oxide with acetonitrile, benzonitrile, and acrylonitrile

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 8, 1966, 1321-1325

TOPIC TAGS: copolymerization, ethylene oxide, acetonitrile, acrylonitrile, reaction mechanism, monomer, polymerization catalyst

ABSTRACT: An investigation has been made on copolymerizing ethylene oxide with acetonitrile, benzonitrile, and acrylonitrile by cationic, anionic, and radical mechanisms. The copolymerization constants were measured. It was found that ethylene oxide was more active than nitriles with the cation mechanism and more active than acetonitrile and benzonitrile in anion copolymerization. Acrylonitrile is polymerized with ethylene oxide by the cation mechanism basically due to the nitrile group. Aluminum isopropylate was found to be independent of the composi-

Card 1/2

UDC: 66.095.26+678.13+678.55+678.745

L 00839-67

ACC NR: AP6027764

tion of the initial monomer mixture. Orig. art. has: 1 figure, 2 formulas, and
3 tables. [Based on authors' abstract] O [NT]

SUB CODE: 07 / SUBM DATE: 20Feb65 / ORIG REF: 003 / OTH REF: 005 /

Card 2/2 pb

ARAKELYAN, S.

In a fraternal family of peoples.. Sov. profsoiuzy 16 no.22:29-
32 N '60.
(MIRA 14:1)

1. Predsedatel' Armyanskogo respublikanskogo soveta profsoyuzov.
(Armenia—Economic conditions)
(Armenia—Socialist competitions)

ARAKELYAN, S.

Auditors as well as helpers. Sov. profsoiuzy 17 no.19:32-34
O '61. (MIRA 14:9)
1. Predsedatel' Armyanskogo respublikanskogo soveta profsoyuzov.
(Armenia--Trade unions) (Auditing)

ARAKELYAN, S. (Yerevan)

Every activist is an educator. Sov. profsciuz 20 no.4:32-34
(MIRA 17:3)
F '64.

1. Predsedatel' Armyanskogo respublikanskogo soveta
professional'nykh soyuzov.

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

MARKARYAN, B. Ye.; OGANESEAN, E. Ya.; ARAKELYAN, S. N.

Detailed colorimetry of galaxies NGC 2976, 3031 (M 81), 3034
(M82), and 3077. Soob. Biur. obser. no. 30:3-20 '62.
(MIRA 15:10)

(Galaxies)

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

KASPAR'YAN, R.M.; ARAKELYAN, S.S.

Ganglioneuroma of the posterior meditastimum. Vest. rent. i rad. 36
no. 1:68-69 Ja-F '61. (MIRA 14:4)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. I.Kh. Gevorkyan)
Yerevanskogo meditsinskogo instituta i rentgenovskogo otdeleniya
(zav. R.M. Kaspar'yan) 2-y klinicheskoy bol'nitsy.
(MEDIASTINUM—TUMORS)

DANGYAN, M.T.; ARAKELYAN, S.V.

Preparation of δ -oxy- γ -lactones. Part 2 [in Armenian with summary in
Russian. Nauch.trudy Brev.un.no.53:3-14 '56. (MLRA 9:10)

1.Kafedra organicheskoy khimii.
(Lactones)

AHAKELYAN, S.V.; DANGYAN, M.T.

Preparation of δ -oxy- γ -lactones. Report No.3 [in Armenian
with summary in Russian]. Nauch. trudy Erev. un. 60:17-21 '57.
(MIRA 11:8)

1.Kafedra organicheskoy khimii Yerevanskogo gosudarstvennogo
universiteta. (Lactones)

ARAKELYAN, S.V.; DANGYAN, M.T.

Preparation of α -allyl- β -(4-alkoxyphenyl) propionic acids.
Report No.1 [in Armenian with summary in Russian]. Nauch. trudy
Erev. un. 60:23-31 '57. (MIRA 11:8)

1.Kafedra organicheskoy khimii Yerevanskogo gosudarstvennogo
universiteta.
(Propionic acid)

S/171/60/013/001/005/005
E142/E465

AUTHORS: Dangyan, M.T. and Arakelyan, S.V.

TITLE: The Preparation of Some New Unsaturated Esters

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR, Khimicheskiye nauki, 1960, Vol.13, No.1, pp.51-53

TEXT: In previous communications the authors have shown that γ, δ -unsaturated acids react with hydrogen peroxide in a medium of formic or acetic acid and form the corresponding α -substituted δ -hydroxy- γ -valerolactones (Ref.1). α -Substituted δ -oxo- γ -caprolactones are formed in an analogous manner by oxidizing γ, δ -unsaturated acids which contain a Cl-atom in the δ -position. The method has now been extended to the oxidation of alkoxy-benzyl-2-bromallyl acetic acids. The synthesis of these substances, especially of the diethyl esters of substituted malonic acids, is of importance during the preparation of barbiturates containing p-alkoxybenzyl and 2-bromallyl groups (Ref.3). The diethyl esters of p-alkoxybenzyl-2-bromallyl malonic acid were synthesized in satisfactory yields by reacting the sodium salts of the diethyl esters of p-alkoxybenzyl malonic acid with 2,3-dibromopropene in a

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S/171/60/013/001/005/005
E142/E465

The Preparation of Some New Unsaturated Esters

benzene medium. By this method 6 hitherto undescribed esters were synthesized. There are 1 table and 3 Soviet references.

ASSOCIATION: Yerevanskiy gosudarstvennyy universitet
Kafedra organicheskoy khimii (Yerevan State University
Department for Organic Chemistry)

SUBMITTED: October 21, 1959

Card 2/2

ARAKELYAN, S. V., Cand Chem Sci -- "Synthesis of α -substitutes
of δ -oxy- γ -lactones." Yerevan, 1961. (Com of Council of Min-
isters ArSSR on Higher and Sec Spec Ed. Yerevan State U)
(KL, 8-61, 230)

α = alpha

β = beta

γ = gamma

- 64 -

ARAKELYAN, S.V.; DANGYAN, M.T.; AVETISYAN, A.A.

Reaction of allylalkylacetic acids with mercury acetate.
Izv.AN Arm.SSR.Khim.nauki 15 no.5:435-438 '62. (MIRA 16:2)

1. Yerevanskiy gosudarstvenny universitet, kafedra organicheskoy
khimii.

(Acetic acid)
(Mercury acetates)

ARAKELYAN, S.V.; DANGYAN, M.T.; ZALINYAN, M.G.; SARKISYAN, S.A.

Preparation of δ -alkoxy-(ar oxy-, phthalimido)- γ -lactones.
Izv. AN Arm. SSR. Khim. nauki 15 no. 5: 439-442 '62. (MIRA 16:2)

1. Yerevanskiy gosudarstvennyy universitet, kafedra
organicheskoy khimii.
(Lactones)

DANGYAN, M. T.; ZALINYAN, M. G.; ARAKELYAN, S. V.

Preparation of 2-diethylaminoethyl esters of substituted
 α -chlorocrotylactic acids. Izv. AN Arm. SSR. Khim. nauki 16
no. 1&43-46 '63 (MIRA 17:8)

1. Yerevanskiy gosudarstvennyy universitet, kafedra organi-
cheskoy khimii.

ARAKELYAN, S.V.; RASHIDYAN, L.G.; DANGYAN, M.T.

Synthesis of α -substituted β -bromomercury γ -valerolactones.
Izv.AN Arm.SSR.Khim.nauki 17 no. 2:173-175 '64. (MIRA 17:6)

1. Yerevanskiy gosudarstvennyy universitet, kafedra organicheskoy
khimii.

ARAKELYAN, S:

Decades of travel accomplished in a few years. Okhr. truda i sots.
strakh. 6 no.9:8-9, 12 S '63. (MIRA 16:10)

1. Predsedatel' Respublikanskogo soveta professional'nykh soyuzov
Armenii.

Differential Equations, Ordinary Differential Equations (2951)

Izv. AN Arm. SSR, Ser. Fiz.-Mat. i Tekh. N., No. 2, 1953, pp 55-71

Calculation of Girders on a Continuous Soil Base

Determines the law of reactive pressures for a girder of specified length, width, and rigidity on a water-saturated clay stratum.

SO: Referativnyy Zhurnal -- Matematika, No. 4, 1954 (W-30907)

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

ARAKEL'YAN, U.G.

25731 Arakel'yan, U.G. Persik I abrikos Na Vysote 1650 Metrov. (Iz Opyta Kirgiz Plodcovoshchnoy Opytnoy Stantsii). Sad I ogorod, 1948, No. 7, S. 75.

SC: Letopis' Zhurnal Statey, No. 30, Moscow, 1948

A
AFKEL'YAN, U. G.

Budding

Using local binding material in bud grafting. Sad i og., no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _____ 1953, Unclassified.

ARAKELYAN, U.G.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr. 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
Gareyev, E.Z.		
<u>Arakelyan, U.G.</u>		
Bychokova, N.F.	"Michurinian Varieties of	Kirgiz Affiliate, Academy of
Kolenko, A.Z.	Fruit Trees in Kirgiziya"	Sciences USSR
La'shin, M.I.		
Kuzema, V.G.		
Kryachkov, P.Ya.		

SO: W-30604, 7 July 1954

ARAKEL'YAN, U.G. Cand Agr Sci -- (diss) "Growth and ^{productivity} ~~fertility~~ of the
Michurin variety^{ies} of apple trees in Northern Kirgizia.". Frunze, 1956.
16 pp 22 cm. (Min of Agriculture USSR. Fruit and Vegetable Inst im I.V.
Michurin). 110 copies. (KL, 10-57, 104).

-15-

SHOSTAKOVSKIY, M.F.; CHEKULAYEVA, I.A.; KONONOV, N.F.; ZARUTSKIY, V.V.;
OSTROVSKIY, S.A.; ARAKELYAN, V.G.

Triethanolamine vinylation reaction. Izv, AN SSSR. Ser. khim. no.4;
698-701 '65. (MIRA 18:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

ZARUTSKIY, V.V.; ARAKELYAN, V.G.; OSTROVSKIY, S.A.; GOLOVKIN, G.V.

Improving the sensitivity of the detector in a Kh.T.-2M device.
Zav. lab. 30 no.10:1286 '64. (MIRA 18:4)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.

BOGDANOVA, A.V.; KUGATOVA-SHEMYAKINA, G.P.; VOLKOV, A.N.; ARAKELYAN, V.G.

Synthesis of diacetylenic alcohols, glycols, and their derivatives
based on diacetylene. Izv.AN SSSR. Ser.khim. no.1:174-176 Ja
'64.
(MIRA 17:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

ACCESSION NR: AP4010489

S/0080/64/037/001/0182/0186

AUTHOR: Sidel'kovskaya, F. P.; Ogibina, T. Ya.; Arakelyan, V. G.

TITLE: The quantitative determination of vinyl pyrrolidone by the spectrophotometric method

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 1, 1964, 182-186

TOPIC TAGS: vinyl pyrrolidone, ultraviolet spectrum, extinction factor, pyrrolidone, polyvinyl pyrrolidone, polymerization

ABSTRACT: According to some reports (B. G. Oster & E. H. Immergut, J. Amer. Chem. Soc., 76, 1393, 1954), the unreacted monomer can be determined by use of the ultraviolet spectrum in the vinyl pyrrolidone polymerization process. Additional experiments have been made to develop a method for the quantitative determination of vinyl pyrrolidone and for establishing its quantities in certain reaction mixtures. The results obtained from testing artificial mixtures of vinyl and polyvinyl pyrrolidone in various proportions justify the use of formula (2) for calculating the ultraviolet spectrum:

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ACCESSION NR: AP4010489

$$x = 0.682 \cdot K_p, \quad (2)$$

where x is the percent of the vinyl pyrrolidone content in the analyzed mixture, and K_p the extinction factor of the water solution of the analyzed mixture. The spectrophotometric method that has been developed for the quantitative determination of vinyl pyrrolidone in mixtures with polyvinyl pyrrolidone is simple, and requires little time (15-20 minutes) and a small quantity of material (5-100 milligrams). It is currently being used for analyzing multicomponent mixtures (samples) in the polymerization reactions of vinyl pyrrolidone. "The authors express their gratitude to Ye. M. Popov for his valuable advice and interest shown in this work, and to V. M. Kosicheva for her assistance in the experiments." Orig. art. has: 5 figures, 3 formulas and 2 tables.

ASSOCIATION: Institut organicheskoy khimii imeni N. D. Zelinskogo, AN SSSR (Institute of Organic Chemistry AN SSSR)

Card 2/3

ARAKELYAN, V.S.

Optimum conditions for dilution in analysis by the isotope
dilution method. Zav.lab. 29 no.1:78-80 '63. (MIRA 16;2)

1. Institut fizicheskoy khimii AN SSSR.
(Chemistry, Analytical) (Isotopes)

ARAKELYAN, V.S.; KAZARYAN, R.A.; SIMONYAN, L.V.

Study of the electro-optical properties of bentonite. Izv.
AN Arm. SSR. Ser. fiz.-mat. nauk 18 no.1:134-139 '65.
(MIRA 18:6)
1. Yerevanskiy gosudarstvennyy universitet.

SPITSYN, Vikt. F., akademik; ARAKELYAN, V.S.

Diffusion coefficients determined by the adsorption method from the
average displacement. Dokl. AN SSSR 164 no.4:864-867 O '65.
(MIRA 18:10)

1. Institut fizicheskoy khimii AN SSSR.

ACC NR: AP7010712

SOURCE CODE: UR/0020/66/170/005/1113/1116

AUTHOR: Arakelyan, V. S.; Spitsyn, Vikt. I. (Academician)

ORG: Institute of Physical Chemistry, Academy of Sciences USSR
(Institut fizicheskoy khimii AN SSSR)

TITLE: Determining the coefficient of diffusion of an electrically active impurity in semiconductors from the change in electrical conductivity as successive layers are removed

SOURCE: AN SSSR. Doklady, v. 170, no. 5, 1966, 1113-1116

TOPIC TAGS: semiconductor impurity, germanium property, electric resistance, semiconductor carrier

SUB CODE 09

ABSTRACT: A method is proposed for studying the diffusion of any electrically active impurity in semiconductors by measuring the electrical resistance of the specimen before and after removal of successive layers. The results of these measurements give the carrier concentration in each successively removed layer and these data are used for establishing the relationship between impurity concentration and depth of penetration during diffusion. It is assumed that the number of carriers is known as a function of the number of impurity atoms. The coefficient of diffusion may then be cal-

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UDC: 539.219.3

0930 09301

ACC NR: AP7010712

culated by any accepted method. The problem thus reduces for all practical purposes to determining the concentration of carriers produced in the semiconductor by diffusion of a given element. The proposed method is verified on the basis of antimony diffusion in low-resistance n -germanium. The results show satisfactory agreement between the given method and the radioactive method with a coefficient of diffusion which agrees with the data in the literature. The method may be used for determining the concentration of any electrically active impurity element in a semiconductor as long as the carrier mobility is constant. In cases where the concentration of impurity atoms is considerable and the effect of concentration on mobility must be determined, it is advisable to use the electrical resistance method in combination with some other method for direct determination of impurity concentration (radioactive, spectral, chemical, etc.). This gives a quantitative estimation of the degree of ionization of the impurity atoms as a function of their concentration. Orig. art. has: 2 figures and 8 formulas.

JPRS: 40,351

Cord 2/2

S/252/63/036/002/002/003
D218/D308

AUTHORS: Kocharyan, N.M., Corresponding member of the AS Arm.
SSR, Nalbandyan, N.A., Arakelyan, V.Ts., and Farshyan,
G.S.

TITLE: A study of the process of destruction and heat aging
of polychloroprene rubber (nairite)

PERIODICAL: Akademiya nauk Armyanskoy SSR. Doklady, v. 36, no. 2,
1963, 83-87

TEXT: The present paper is concerned with a study of the effect of ultrasound frequency on the degree of destruction of nairite (emulsion copolymer of chloroprene with S, $-(CH_2-CCl=CH-CH_2)_{n_1}$ - $(S)_{m_1}-(CH_2-CCl=CH-CH_2)_{n_2}-(S)_{m_2}-\dots$ where n is up to 100 or more and m up to 6) solutions, and with destruction of such solutions by heat at moderate temperatures. The apparatus consisted of a reactor, oil bath, and an ultrasonic generator, capable of an output of up to 50 w/cm² at 400, 600, 3000, 4000 and 5000 kc/s and up

Card 1/3

S/252/63/036/002/002/003
D218/D308

A study of the process ...

100 w/cm² at 800, 1000, 1500 and 2000 kc/s. The temperature was kept constant at 20°, to 1°C. Degree of destruction was assessed by rel. viscosity, measured at 20 ± 0.1°C with Ostwald's viscometer. The acoustic power used was 17 w/cm², and each frequency was tried for 15, 30, 45, 60 and 90 min; nairite concentration was 0.75%, in benzene. It was found that the viscosity η_t after t minutes of sounding is

$$\eta_t = (\eta_0 - \eta_\infty)e^{-\beta t} + \eta_\infty, \quad (1)$$

where β is a constant, η_0 the initial viscosity and η_∞ the viscosity at $t = \infty$. The mol. wt. decreases to a constant value, which depends on frequency and power of the ultrasound; maximum destruction occurs at 800°C. Thermal and oxidative destruction also begins rapidly and settles to a constant level (e.g. 10.5% after 1.5 months at room temperature in the presence of air, and 6.4% in the absence of air). There are 3 figures and 1 table.

ASSOCIATION: Tsentral'naya nauchno-issledovatel'skaya fiziko-tehnicheskaya laboratoriya Akademii nauk Armyanskoy SSR (Central Scientific Research Physico-Technologi-

Card 2/3

A study of the process ...

S/252/63/036/002/002/003
D218/D308

cal Laboratory of the Academy of Sciences of the
Armenian SSR)

SUBMITTED: September 20, 1962

Card 2/3

KOCHARYAN, N.M.; NALBANDYAN, N.A.; ARAKELYAN, V.TS.; FARSHYAN, G.S.

Process of degradation and thermal aging of polychloroprene rubber
(nairit). Dokl. AN Arm. SSR 36 no.2:83-87 '64. (MIRA 17:3)

1. TSentral'naya nauchno-issledovatel'skaya fiziko-tehnicheskaya
laboratoriya AN Armyanskoy SSR. 2. Chlen-korrespondent AN Armyanskoy
SSR (for Kocharyan).

ACCESSION NR: APM118545

REF ID: A6500 3 1000 1000

AUTHOR: Kocharyan, N. M. (Corresponding member AN ArmSSR); Naibanuyan, N. A.; Arateyan, V. Ts.; Yarsnyan, G. S.

TITLE: Absorption of ultrasonic waves in benzene solutions of polystyrene

SOURCE: ANArmSSR. Doklady, v. 39, no. 4, 1964, 221-226

TOPIC TAGS: ultrasonic wave, acoustic absorption, acoustic theory, acoustic wave, benzene, polystyrene, solution property

ABSTRACT: Reported on is the molecular mechanism of the propagation of

ultrasonic waves in benzene solutions of polystyrene. It is shown that the absorption coefficient of ultrasonic waves in benzene solutions of polystyrene is proportional to the concentration of polymer and is given by the equation
$$\alpha = \frac{C}{3\rho c^2}$$

Card 1.4

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

100-2145

APPROVAL NO. APPROVAL

APPROVAL ACTION HAS BEEN SERVED. DATE OF SERVICE IS 10 MAY 1986. APPROVAL NUMBER

100-2145. APPROVAL DATE IS 10 MAY 1986.

APPROVAL NUMBER 100-2145. APPROVAL DATE 10 MAY 1986.

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

S 5'091-65

ACCESSION NR: AP5018545

It was found that in a benzene solution of crovastatin the following
changes of the properties may take place with time. The viscosity
of the solution increases by time, and the absorption of light
increases with time.

Card 3/4

100-101

ACCESSION NR: AP0018545

ASSOCIATION: Tsentral'naya nauchno-issledovatel'skaya fiziko-tehnicheskaya
laboratoriya Akademii nauk SSSR (Central Research Institute of Physics and
Technology of the USSR Academy of Sciences, USSR)

Card 4/4

ARAKELYAN-AZARYAN, Ye.A.

Effect of different fallow systems on the biological characteristics
and yields of winter wheat grown as a first subsequent crop. Izv.
AN Arm. SSR. Biol. nauki 12 no.6:65-71 Je '59. (MIRA 12:10)

1.Armyanskij sel'skokhozyaystvennyy institut.
(Fallowing) (Wheat)

ARAKELYAN-AZARYAN, YE. A., CAND AGR SCI, "EFFECT OF
VARIOUS ~~types~~ ^{types} OF FALLOW LANDS (BARE, EARLY, OCCUPIED, AND
MAL'TSEV FALLOW LAND) ^{upon} CERTAIN CONDITIONS OF SOIL FER-
TILITY AND YIELD OF WINTER WHEAT." BAKU, 1960. (COM ~~FOR~~
HIGHER AND SEC SPEC ED OF THE COUNCIL OF MINISTERS AZSSR,
AZERBAYDZHAN AGR INST). (KL, 3-61, 224).

311

MERKULOV, V.A., kand.tekhn.nauk; KRASUNTSEV, Ye.M., inzh.;
ARAKEL'YANTS, A.K., inzh.

Effect of the ventilation system on the temperature conditions
in the working face of blind workings. Trudy Sem.po gor.
teplotekhn. no.4:106-112 '62.

(MIRA 15:8)

1. Shakhtinskiy nauchno-issledovatel'skiy i proyektno-konstruktorskiy
ugol'nyy institut.

(Mine ventilation)

MERKULOV, V.A., kand.tekhn.nauk; ARAKEL'YANTS, A.K., inzh.; KRASUNTSEV,
Ye.M., inzh.

Improving the climatic conditions in stopes of Artem Mine No.2.
Trudy Sem.po gor.teplotekh. no.4:136-140 '62. (MIRA 15:8)

1. Shakhtinskiy nauchno-issledovatel'skiy i proyektno-konstruktorskiy
ugol'nyy institut.
(Donets Basin--Mine ventilation)

ARAKEL'YANTS, K.Z.; ZAGOROVSKAYA, L.T. [Zahorovs'ka, L.T.]

Determination of the need of medical supplies is an important problem in the work of pharmacy administrations. Farmatsev. zhur. 17 no.6:3-7 '62. (MIRA 17:6)

1. Glavnoye aptechnoye upravleniye Ministerstva zdravookhraneniya UkrSSR, TSentral'naya nauchno-issledovatel'skaya aptechnaya laboratoriya.

KRAVCHENKO, I.M.; ARAKEL'YANTS, K.Z.

New way of distributing surplus commodities. Farmatsev. zhur.
18 no.2:73-74 '63.

(MIRA 17:10)

1. Glavnoye aptechnoye upravleniye Ministerstva zdravookhraneniya
UkrSSR.

TUGARINOV, A.I.; SHANIN, L.L.; KAZAKOV, G.A.; ARAKELYANTS, M.M.

Rock age of the Vindhyan system (India) according to glauconites.
Geokhimiia no.6;652-660 Je '65. (MIRA 18:7)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry,
Academy of Sciences, U.S.S.R., Moscow.

AKOL'ZIN, P.N.; ARAKEL'YANTS, N.M.; BUYANOVA, O.A.; KIRNOSOV, V.I.;
KISELEVSKIY, S.L.; TARAPIN, V.N.; SHCHEDROVITSKIY, S.S.;
EYDEL'MAN, R.Ya.

Unified series of strain gauges for the automation of construction and road machinery. Priborostroenie no.8:11-12
Ag '62.

(Strain gauges) (MIRA 15:9)

ARAKEL'YANTS, N.M.

Heavy-duty linear induction converters for strain gauges.
Priborostroenie no.8:16-17 Ag '62. (MIRA 15:9)
(Strain gauges) (Converters)

ARKHIPOV, S.M.

Pressure regulator for lager tanks. Ferm. i spirt. prom. 31
no.4:33 '65. (MIRA 18:5)

1. Moskovskiy pivovarennyy zavod.

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

A R A K H O V , S . V .

PANHVIN, V.S.; ARAKHOV, S.V.

Lvov chemopharmaceutical plant. Med.prom. 11 no.10:40-44 0 '57.
(LVOV--DRUG INDUSTRY) (MIRA 11:1)

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

LIBRARY, E.R.
TERPIGOROVA, Vera Dmitriyevna; KUCHIN, Nikolay Dmitriyevich; MAYSHEVA,
Natal'ya Ivanovna; ~~ARAKIN, V.D.~~, dots., red.; GADZHINSKAYA, M.A.,
red.izd-va; ALADOVA, Ye.I., tekhn.red.

English for mining students. Pod metodicheskoi red. V.D.Arakina.
Moskva, Ugletekhizdat, 1957. 462 p. (MIRA 11:4)
(Coal mines and mining)
(English language--Textbooks for foreigners--Russia)

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

BABKOV, B.F.; ARAKLIN, S.A.

Construction of mining and ore dressing combines in the
Krivoy Rog Basin. Sbor. nauch. trud. KGRI 18:3-15 '62.
(MIRA 17:5)

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

GABELOVA, N.A.; ARAKOLOV, O.G.; MARTUSEV, L.T.; LYASS, F.M.

Device for automatic gammagraphy in clinical isotope studies. Med.
rad. 5 no.6:61-64 '60. (MIRA 13:12)
(GAMMA RAYS--MEASUREMENT)

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

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CIA-RDP86-00513R000101910012-6

amine groups. - which depends upon the presence of free - /2

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CIA-RDP86-00513R000101910012-6"

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

ARALEVICH, I.

Visiting Michael Sholokhov. Vympel 10 no.23:23-24 D '47.
(MIRA 12:9)
(Sholokhov, Mikhail Alexandrovich, 1905-)

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

ARALICHEV, I.

"Machine Tractor Stations"

SO: T. I. No. 52614, 52616-18 dn file in L of C, Air

P: Ogonek, Moscow, 1946

ARALICHEV, I.

The white ribbon. Vympel 11 no. 9:18-19 My '48.
(MIRA 12:9)
(Paper industry)

1. ARALICHEV, I.
2. USSR (600).
4. Industries-Kuznetsk Basin
7. Kuznetsk today. Znan. sila. no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

1. ARALICHDEV, I.
2. USSR (600)
4. Steel Industry-Kuznetsk Basin
7. Kuznetsk steel workers.
Znan. sila No. 11, 1952
9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

"APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6

ARALICHEV, I.

As a part of Moscow's two billions. Vympel 11 no.22:13-14
N '48. (MIR 12:9)
(Railroads--Cars)

APPROVED FOR RELEASE: 06/05/2000

CIA-RDP86-00513R000101910012-6"

ARALIN, G.

Making use of potentialities to increase truck productivity. Avt.
transp. 33 no. 9:18-19 S'55. (MLRA 8:12)

1. Komandir Engel'skoy avtoroty
(Motortrucks)

ARALIN, G.

Using the unit method of repair assures improved mechanical condition of automobiles. Avt.transp. 34 no.4:16 Ap '56. (MLRA 9:8)

1. Komandir Engel'sskoy avtoroty.
(Automobiles--Repairing)

ARALIN, G.

Everyone should profit from the experience of outstanding workers.
Avt.transp. 39 no.4:5 Ap '61. (MIRA 14:5)

1. Nachal'nik Engel'skogo avtoKhozyaystva.
(Highway transport workers)

A K A L O V , D. P.

107-57-5-14/63

AUTHOR: Aralov, D., Chief of the Radio Team

TITLE: "Mirnyy" Settlement (Poselok Mirnyy)

PERIODICAL: Radio, 1957, Nr 5, p 12 (USSR)

ABSTRACT: Our small radio team will take part in the work of the Geophysical Year. Nikolay Kotlomanov is working as a radio operator at the "Pionerskaya" station. Nikolay Masalov at the "Oazis" station. Maksim Lyubarets is with the group of the intracontinental tractor-sledge train (headed by Shumskiy, Doctor of Geographical Sciences, glaciologist). Igor' Ozerov is working as a radio operator at the "Komsomol'skaya" station; Stepan Polyakov at the "Vostok" station situated in the area of the South Geomagnetic Pole. All stations have maintained regular reliable communications; they have reported scientific data to Mirnyy several times a day. In addition to radio communication equipment we have a radiosonde and a radiotheodolite which are used for determination of meteorological data at high altitudes. The ionosphere is also being studied. Other radio equipment is used in seismological work.

Our radio operators spend a lot of time for amateur communications. They use mostly the 14-meter band. Radio operators Anatoliy Yarlykov and Leonid Bogdanov take part in amateur contacts. They often work UAOFR, UAOCD, and UAOKFG in the Far East; they also get in touch with Moscovites UA3AW, UA3BN, and with UAIKAG in Leningrad. We need portable transmitting-receiving stations 5 to 10 watt, on short and medium waves; we are asking amateurs and radio industry to develop such stations.

AVAILABLE: Library of Congress
Card 1/1

ARALOV, D.; KOTLOMANOV, N.; MAKSIMOV, A.; BOGDANOV, L.

Radio operators of the Second Antarctic Expedition speak. Radio
no.5:6-7 My '58. (MIRA 11:4)

1. Nachal'nik radiootryada vtoroy antarkticheskoy ekspeditsii (for
Aralov).
(Antarctic regions--Radio stations)

TRESHNIKOV, Aleksey Fedorovich, kand.geograf.nauk. Prinimali uchastiye:
MATVEYCHUK, Georgiy Ivanovich; CHUPIN, Nikolay Petrovich; ARALOV,
Dmitriy Petrovich; TIKHOMIROV, Igor' Ivanovich, vrach-stomatolog;
MANSUROW, Sergey Mikhaylovich; KRICHAK, Oskar Grigor'yevich, kand.
geograf.nauk; SHUMSKIY, Petr Aleksandrovich, doktor geograf.nauk;
SHESTRIKOV, Nikolay Pavlovich, mladshiy nauchnyy sotrudnik, gidro-
log. DROZHZHINA, I.P., tekhn.red.

[Second Continental Expedition, 1956-1958; general description]
Vtoraia kontinental'naia ekspeditsiia, 1956-1958 gg.; obshchee opis-
anie. Pod red. A.F.Treshnikova. Leningrad, Izd-vo "Morskoi
transport," 1960. 205 p. (Sovetskaia antarkticheskaiia ekspeditsiia,
no.8).
(MIRA 13:7)

1. Leningrad. Arkticheskiy i antarkticheskiy nauchno-issledovatel'-
skiy institut. 2. Nachal'nik Vtoroy kontinental'noy ekspeditsii
(for Treshnikov). 3. Zamestitel' nachal'nika Vtoroy kontinental'noy
ekspeditsii po administrativno-khozyaystvennoy chasti; nachal'nik
baregovoy bazy (for Matveychuk).

(Continued on next card)

TRESHNIKOV, Aleksey Fedorovich ----(continued) Card 2.

4. Glavnnyy inzhener Vtoroy kontinental'noy ekspeditsii (for Chupin).
5. Nachal'nik otryada svyazi i radionavigatsii Vtoroy kontinental'noy ekspeditsii (for Aralov).
6. Starshiy vrach Vtoroy kontinental'noy ekspeditsii (for Tikhomirov).
7. Nachal'nik geofizicheskogo otryada Vtoroy kontinental'noy ekspeditsii (for Mansurov).
8. Nachal'nik aerometeorologicheskogo otryada Vtoroy kontinental'noy ekspeditsii (for Krichak).
9. Nachal'nik glyatsiologicheskogo i vnutrikontinen-tal'nogo otryada Vtoroy kontinental'noy ekspeditsii.
10. Nachal'nik otryada pribrezhnoy gidrologii Vtoroy kontinental'noy ekspeditsii (for Shesterikov).

(Antarctic regions--Russian exploration)

AUTHOR: Aralov, M.S.

109-3-2-23/26

TITLE: Characteristics of a Pentode Operating with a Negative Potential at the Third Grid (O svoystvakh pentoda v rezhime otritsatel'nogo potentsiala na tret'yej setke)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol.III, No.2,
pp. 292-296 (USSR).

ABSTRACT: An experimental investigation of thermionic pentode tubes, operating with a comparatively large negative potential at the third grid, was carried out. It was found by means of the circuit of Fig.1 that the anode-grid characteristics (i.e. the anode current as a function of the potential of the first grid) can be divided into three distinct regions (see Figs. 2 and 3). In the first region (at low grid voltages), the current rises gradually with a positive slope; in the second region, the current attains a maximum, while in the third region, the current gradually decreases until, in the vicinity of zero grid voltages, it is almost entirely cut off. The author expresses his gratitude to Professor P.V. Timofeyev for his help. There are 3 figures and 2 Russian references.

SUBMITTED: April 5, 1957

AVAILABLE: Library of Congress
Card 1/1 1. Pentodes-Characteristics

AKHLOV, M.S.

11 часов
(с 18 до 22 часов)Г. Н. РезовертВнедрение полевода электронных лучей с пе-
редачей информации транзисторами.С. Г. Афанасьев

Об управлении частотой триодного генератора.

А. Н. ЧистовНизкочастотные пути сопряжения электронных
ламп.М. С. АрабовМетод получения поливольтных радиолитотерапевтических за-
дач путем выделки фоно в низкочастотных элек-
тронных лампах.12 часов
(с 10 до 16 часов)Е. В. Багдасар,В. Я. Киселев,Д. С. Чирков

Взаимодействие электронного пучка с пленкой.

36

Г. Д. Лобов
Генераторный метод СВЧ пакетнойА. Н. Виноградов,И. Н. Залогин,С. С. ШахаджановВзаимодействие упаковочных частот на радиоли-
ческих электронных пучках.А. М. Егоров,Е. В. Багдасар,И. Н. Залогин,Д. С. ЧирковЭлектронные контактные линзы в инструментах меди-
цинской системы ее биоматериалов

В СЕКЦИЯ РАДИОИЗМЕРЕНИЯ

Руководитель Г. Д. Буряк

9 часов
(с 10 до 16 часов)А. Г. СоколовО перспективных возможностях стабильности изме-
рил генераторов для стабилитонов частоты.

37

Report submitted for the Centennial Meeting of the Scientific Technological Society of
Radio Engineering and Electrical Communications in A. S. Popov (VEKRI), Moscow,
8-12 June, 1959

S/108/60/015/06/04/006
B007/B014

AUTHOR: Aralov, M. S., Member of the Society (VNOR:E)

TITLE: Characteristics of Convex Shapes of Pentodes and Their Utilization

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 6, pp. 51-61

TEXT: The author gives a method by means of which it is possible to obtain non-linear characteristics of the convex shapes of multiple-grid valves. Unlike the methods hitherto known, this method has a simple circuit with one tube only. With this tube one obtains characteristics of differ-

ent shape with a high control efficiency $\frac{S}{I_a}$ (up to 3.2 v^{-1}), and

operations within a wide frequency range are possible. These properties allow to use these convex characteristics in the various fields of radio engineering. In the case of pentodes, convex characteristics are obtained by utilizing the space charge between the negative third grid (whose

VB

Card 1/3

Characteristics of Convex Shapes of
Pentodes and Their UtilizationS/108/60/015/06/04/006
B007/B014

potential is constant) and the positive second (screen) grid (whose potential is changed by the effective resistance connected to this circuit). The specific feature of the new characteristics is their position within the negative range of control-grid voltages. Fig. 1a shows the circuit diagram of the cascade yielding the convex characteristics for pentodes. The characteristics are reproduced in Fig. 1b. With a given shape of the characteristics it is possible to change the plate current in the maximum and the "basis" of the characteristic U_{ox} within a wide range by changing the voltages at the electrodes and the resistances R_a and R_2 . This makes it possible to select the parameters of the characteristic necessary for solving a certain problem. Figs. 1-3 show different convex characteristics, and Table 1 lists the pertinent parameters. Five possibilities of applying such characteristics are enumerated, and some of them are described in more detail. First, the limiting function of convex characteristics are illustrated by the generation of pulses by means of sinusoidal vibrations. Unlike limiters with ordinary characteristics, this tube opens and closes under the action of wave generation. When the grid voltage drops, the tube opens

✓ B

Card 2/3

Characteristics of Convex Shapes of
Pentodes and Their Utilization

S/108/60/015/06/04/006
B007/B014

and closes as well. This property makes it possible to obtain two pulses instead of one at the output from the vibration fed into the grid. This process is illustrated in Fig. 4a. Thus, the convex characteristic divides the primary vibration into two new ones of equal polarity, which are amplified at the same time. The pulses with varying amplitude and a constant duration are transformed into pulses with a constant amplitude and varying duration. The latter permits the simultaneous modulation of the phase and duration of the pulses. The two varieties of this modulation are described. Convex characteristics are further used for the demodulation of various vibrations, i.e., full-wave demodulation is achieved with the aid of a tube. The various shapes of characteristics lead to different characteristics of demodulation. Finally, the author studies full-wave demodulation and plate-current rectification as well as several common properties. There are 9 figures, 2 tables, and 3 Soviet references.

✓ B

SUBMITTED: August 1, 1958 (initially)
August 20, 1959 (after revision)

Card 3/3

9.3273

21526

S/108/61/016/004/003/006

B107/B212

AUTHOR: Aralov, M. S., Member of the Society (see Association)

TITLE: Method for frequency multiplication

PERIODICAL: Radiotekhnika, v. 16, no. 4, 1961, 20-21

TEXT: In order to obtain a high efficiency of frequency multiplication, it is necessary that the separation coefficient of the harmonic component is very high. The present paper gives a method of frequency multiplication which has a plate-grid characteristic and approaches the function $\sin x$ between $0 \leq x \leq \pi$. In order to reach such a characteristic, the space charge between the second and the third grid of a pentode is used. This space charge is formed if a negative, constant voltage (with respect to the cathode) is applied to the third grid, and the plate and screen-grid circuit is loaded correspondingly. The case is investigated where under dynamic conditions the working point is located such that it corresponds to the maximum plate current I_{am} , and that a sinusoidal oscillation $E = E_m \sin x$ is applied to the grid (see Fig. 1);

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Method for frequency multiplication

21526

S/108/61/016/004/003/006

B107/B212

$E_m = \frac{U_{ox}}{2}$ is assumed to be valid. The plate-grid characteristic is described by $I_a = I_m \cos A$, where $A = z \sin \varphi$. To obtain an exact expansion of the function investigated, the first-kind Bessel functions are utilized, and one obtains $\cos(z \sin \varphi) = J_0(z) + 2 \sum_{n=0}^{\infty} J_{2n}(z) \cos(2n\varphi)$; where J denote the first-kind Bessel functions. Remembering that $E_m = \frac{U_{ox}}{2}$, one obtains $z = \frac{\pi}{2}$ and $I_a = I_m \cos(\frac{\pi}{2} \sin \omega t)$. If the expansion is limited to six terms, one obtains

$$I_a = J_0\left(\frac{\pi}{2}\right) + 2 \sum_{n=0}^{\infty} J_{2n}\left(\frac{\pi}{2}\right) \cos(n\omega t) \approx J_0\left(\frac{\pi}{2}\right) +$$

$$+ 2J_2\left(\frac{\pi}{2}\right) \cos(2\omega t) + 2J_4\left(\frac{\pi}{2}\right) \cos(4\omega t) + 2J_6\left(\frac{\pi}{2}\right) \cos(6\omega t) + \dots$$

Since the characteristic investigated is symmetric with respect to the

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Method for frequency multiplication

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y-axis, the function is even and contains only cosine terms. This yields

$$\frac{I_a}{I_{am}} = J_0(1.57) + 2J_2(1.57)\cos(4\omega t) + \\ + 2J_4(1.57)\cos(8\omega t) + 2J_6(1.57) \times \\ \times \cos(12\omega t) + \dots$$

The corresponding values of the Bessel functions are determined from tables and substituted. The results are $I_0 = 0.472 I_m$; $I_2 = 0.51 I_m$;

$I_4 = 0.041 I_m$; $I_6 \approx 0.0$. From this it follows that the Fourier analysis will give even components only and also a second harmonic component which is equal to half the maximum value of the plate current; the higher components are not too important. The real characteristic differs slightly from the ideal case investigated, especially in the initial regions. Therefore, the values found will also differ from real ones. But considering the fact that the greatest deviations from the sine law will occur in regions where the ratio of the plate current to the plate current in the region of convergence is small, it can be assumed that the deviation

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will not have a great influence on the exact operation of the multiplier. Moreover, the operation of the multiplier can be adjusted such that the grid voltage is limited by those regions of the characteristic which will approach best the law $I = I_m \sin x$, i.e., the condition $E_m < U_{ox}/2$ is valid. In this case, the deviations of the real values from the theoretical values of the resolution ratio are much smaller. Now, the results obtained by frequency multiplication with a sine characteristic are compared with those yielded by a class C amplifier. The latter is the most efficient of all known multiplication methods (Ref. 3) and has found wide application in various transmitters and similar devices. A table shows the maximum values of the harmonic component of a multiplier working as a class C amplifier at optimum values of the angle of cutoff φ_{opt} and of a multiplier with a sine characteristic. The most important properties of the latter are: 1) a high value of the second component compared to that of the other multiplier; 2) suppression of uneven components. [Abstracter's note: Complete translation]. There are 1 figure, 1 table, and 3 Soviet-bloc references.

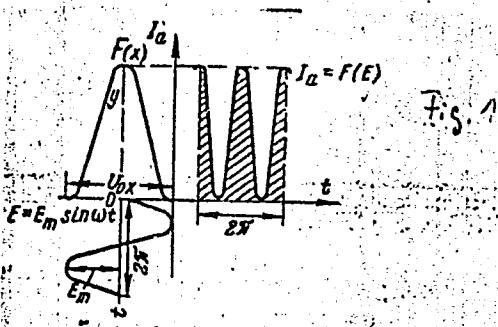
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ASSOCIATION: Nauchno-tehnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A. S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A. S. Popov) [Abstracter's note: Name of association was taken from first page of journal]

SUBMITTED: June 29, 1960



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39351
S/108/62/017/007/007/008
D288/D308

9.4110

AUTHOR: Aralov, M. S., Member of the Society (see
Association)

TITLE: Method of obtaining required pentode charac-
teristics

PERIODICAL: Radiotekhnika, v. 17, no. 7, 1962, 58-65

TEXT: Rather than employ specially designed valves to obtain bell-shaped characteristics (anode current vs. control grid voltage), a simple and yet accurate method of achieving the same results with conventional pentodes is proposed, consisting of space charge control in the zone between screen- and suppressor grids and achieved by applying a controlled negative potential to g_3 and controlled positive potentials to g_2 and anode a. The high slope pentode 6J4 is chosen for detailed demonstration of the method, a number of curves plotting current partition (I_a to

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I_{g2} ratio) vs. U_{g1} , then I_{g2} and U_{g2} vs. U_{g1} and showing regular and symmetrical I_a vs. U_{g1} characteristics obeying parabolic, sinusoidal, and hyperbolic laws. A brief indication of the generation of symmetrical and one-sided triangular and of square wave shapes is given. The latter is achieved by the use of a non-linear anode load and is useful for pulse generating purposes. The repeatability and required degree of supply stabilization obtained are also discussed. There are 6 figures.

ASSOCIATION: Nauchno-tehnicheskoye obshchestvo radiotekhniki i elekrosvyazi im. A. S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications im. A. S. Popov) *[Abstracter's note: Name of Association taken from first page of journal.]*

SUBMITTED: February 26, 1961 (initially)
July 10, 1962 (after revision)

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22032

S/177/61/000/001/008/010
D211/D306

27-6330

AUTHORS: Oksengendler, G.I., Captain of Medical Services,
Aralov, S.S., Senior Engineer-Lieutenant, and
Yemel'yanenko, M.I., Major of Medical Services

TITLE: An apparatus for studying the stability of attentiveness

PERIODICAL: Voyenno-meditsinskiy zhurnal, no. 1, 1961, 74 - 76

TEXT: The proposed apparatus permits the automatic recording of the above-mentioned test. It consists of a panel with nos. 1 - 25 not given in sequence. Under each number there is an electric contact; the airman undergoing the test touches the contact with a connecting rod and closes the circuit; only when he touches the correct consecutive number are the results registered on a tape recorder and the graphs obtained show the times needed to find individual numbers as well as the total time taken during the test. A schema-

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